

Date: Friday, 17/08/2007 11:19:09 AM
 User: Linda Lacelle

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: 02.250 SUPPORT	
Job Number	: 34062		Part Number	: D28911	
Estimate Number	: 11057		Drawing Number	: D2891 REV A1	
P.O. Number	: N/A		Project Number	: N/A	
This Issue	: 17/08/2007 S.O. No. : N/A		Drawing Revision	: A1	
Prsht Rev.	: NC		Material	: N/A	
First Issue	: N/A		Due Date	: 22/09/2007	
Previous Run	: 33693		Qty:	16	Um: Each
Written By					
Checked & Approved By					
Comment	: Est. 02.11.26 Added P/O KJ				

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	PG	PURCHASING	
		Comment: PURCHASING Issue P/O: 4392 Description: D6104-003 Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104 Material release note required. Blank size makes (2) D2891-1	CD 7/08/17 (16)
2.0	D6104003	17-4 SS Roundbar 3.25"OD	
		Comment: Qty.: 1.0000 Each(s)/Unit Total: 16.0000 Each(s) Support 2.25 dia	
3.0	PACKAGING 1	PACKAGING RESOURCE #1	
		Comment: PACKAGING RESOURCE #1 Recieve & Inspect for Transit Damage Ensure Material Release Note is attached	PC 7/8/31 (16)
4.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE	
		Comment: MORI SEIKI LATHE Turn blank for Haas as per Folio FA046	anl 07/11/01 (16)
5.0	QC1	INSPECT ALL DIM TO DIM SHEET	
		Comment: INSPECT ALL DIM TO DIM SHEET	anl 07/11/01 (16)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 17/08/2007 11:19:09 AM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 02.250 SUPPORT

Job Number: 34062

Part Number: D28911

Job Number:



Seq. #: Machine Or Operation:

Description :

6.0 HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: HAAS

Machine as per Folio FA046

Tumble & Deburr

J.L / SF 07/11/18

7.0 QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

J.L / SF 07/11/18

8.0 QC8

SECOND CHECK



Comment: SECOND CHECK

J.F. 07/11/22 (16)

9.0 POWDER COATING

POWDER COATING



M105914



16X

Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

M-1 07/11/23

10.0 QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

Fed 07/11/23 (16)

11.0 PACKAGING 1

PACKAGING RESOURCE #1



PAR

Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: LG

Im an idiot
#32

M 07 11 26

12.0 QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE



Job Completion



U 8/11/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

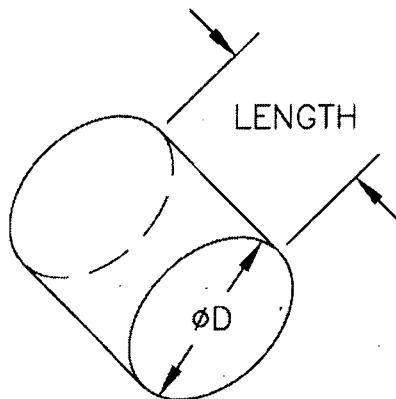
NOTE: Date & initial all entries

DART

DESIGN RF	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS

RELEASED 02.11.25 <i>[Signature]</i>	A	01.04.10	NEW ISSUE
	B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS

SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER X LENGTH (+0.030/-0.000) AS SHOWN.

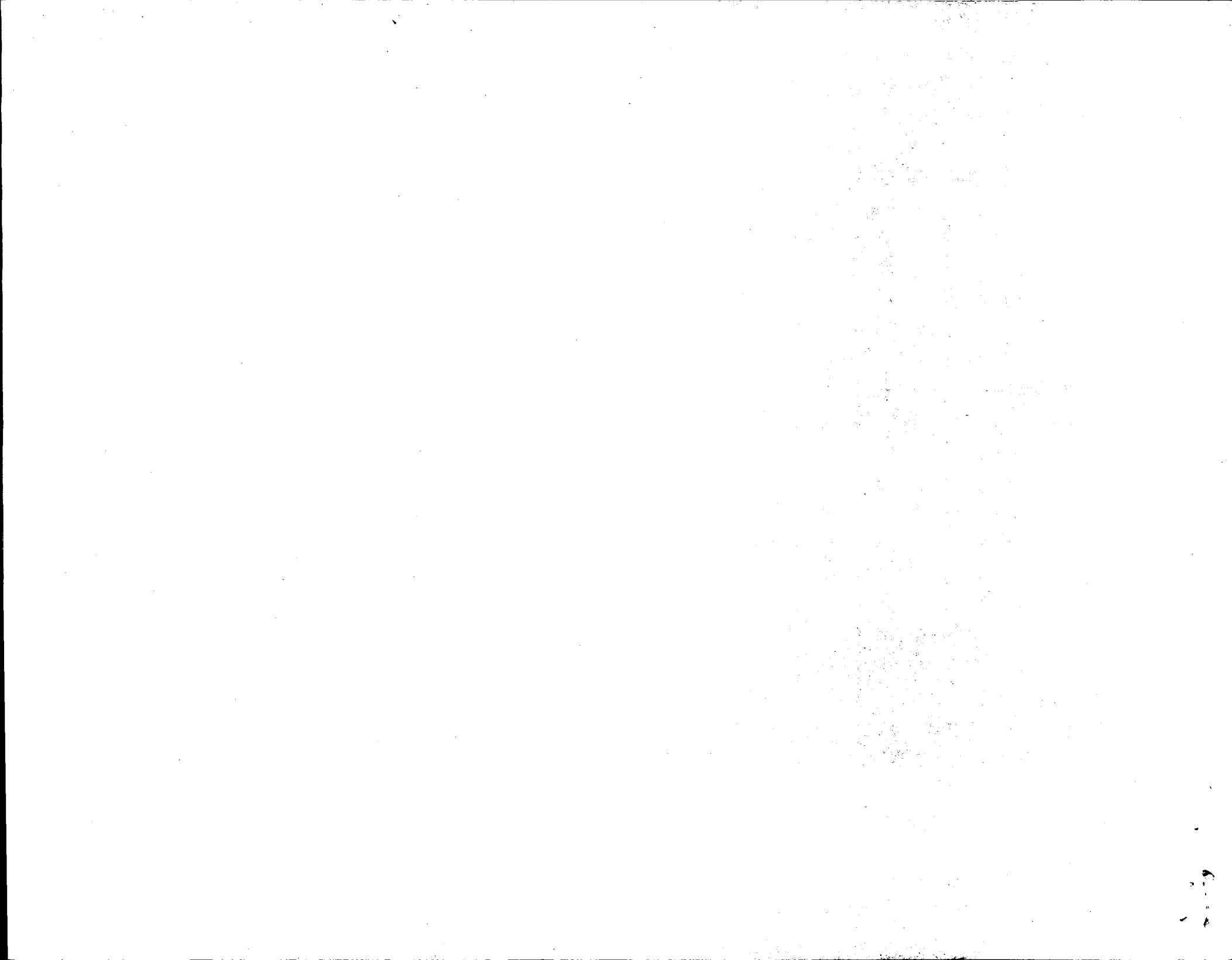
TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	$\phi 3.00$	3.80
D6104-003	17-4 PH STAINLESS STEEL	$\phi 3.25$	3.80
D6104-005	17-4 PH STAINLESS STEEL	$\phi 4.00$	5.10
D6104-007	17-4 PH STAINLESS STEEL	$\phi 4.50$	5.10
D6104-009	17-4 PH STAINLESS STEEL	$\phi 5.25$	4.10
D6104-011	17-4 PH STAINLESS STEEL	$\phi 6.50$	4.10

Copyright © 2001 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.



07-25-07 07:24 FROM-

1-072 F002/000 1-003



P.O. BOX 977
SYRACUSE
NEW YORK 13201

CERTIFICATE OF TEST

A H CASTLE, INC
3400 N WOLF RD
FRANKLIN PARK IL 60131

SHIP TO
A H CASTLE, INC
26800 MILES RD
BEDFORD HEIGHTS OH 44146

OUR ORDER NO.
PC-11330-7-6
DATE
07/16/07

CUSTOMER ORDER # & DATE
10-31163

CUSTOMER REQ. #
DISTRICT

B PARSONS

SHIPPED FROM

SYRACUSE

DESCRIPTION OF MATERIAL

CRU 17-4PH RT A IAC 42470
AMC-3174-10 REV 7 ASME-SA564-04ED T630 ASTM-A564-04 T630
AMS-56430 AISI 630 UNS-S17400

SIZE
3.250 RD

CHEMICAL ANALYSIS

HEAT NO.

HEAT NO.	C	MN	P	S	SI	NI	CR	NO	CU	CB	TA
A18939	.037	.42	.027	.022	.63	4.09	15.28	.11	3.22	.29	.012

CASTLE METALS CORP.
DATE RCVD 7/25/07
IAC 42470
APPROVED BY MF

MECHANICAL PROPERTIES

QUANTITY HEAT NO.

HEAT NO.	TENSILE PSI	YLD. 2% PSI	ELONG. %	RED/BREAK	HARDNESS
1814 & A18939	203,000	174,000	12.3	51.1	RHN 356
					RC 35
					RHN 415

CAPABILITY PHYSICALS AFTER 900 DEG. F. - 1 HR. AIRCOOL:

— MACRO TEST OK
FERRITE 5 %
MAGNAFLUX F/S = 0/0

REDUCTION RATIO: 27.5:1
MATERIAL SOLUTION TREATED AT 1900 DEG. F., HELD 45 MINUTES
AIRCOOLED.

CRUCIBLE MATERIALS CORP. VENDOR #15610.
MATERIAL INGOT CAST.
NAPCA - YES

MATERIAL FREE FROM MERCURY CONTAMINATION AT TIME OF SHIPMENT
NO WELD REPAIR PERFORMED
MATERIAL MELTED IN U.S.A.

THANK YOU FOR SELECTING A QUALITY PRODUCT
MANUFACTURED BY THE EMPLOYEES OF CRUCIBLE SPECIALTY METALS

THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED IN ACCORD
WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH
SPECIFICATION REQUIREMENTS.
CRUCIBLE MATERIALS CORPORATION
ACTING BY AND THROUGH ITS SPECIALTY METAL

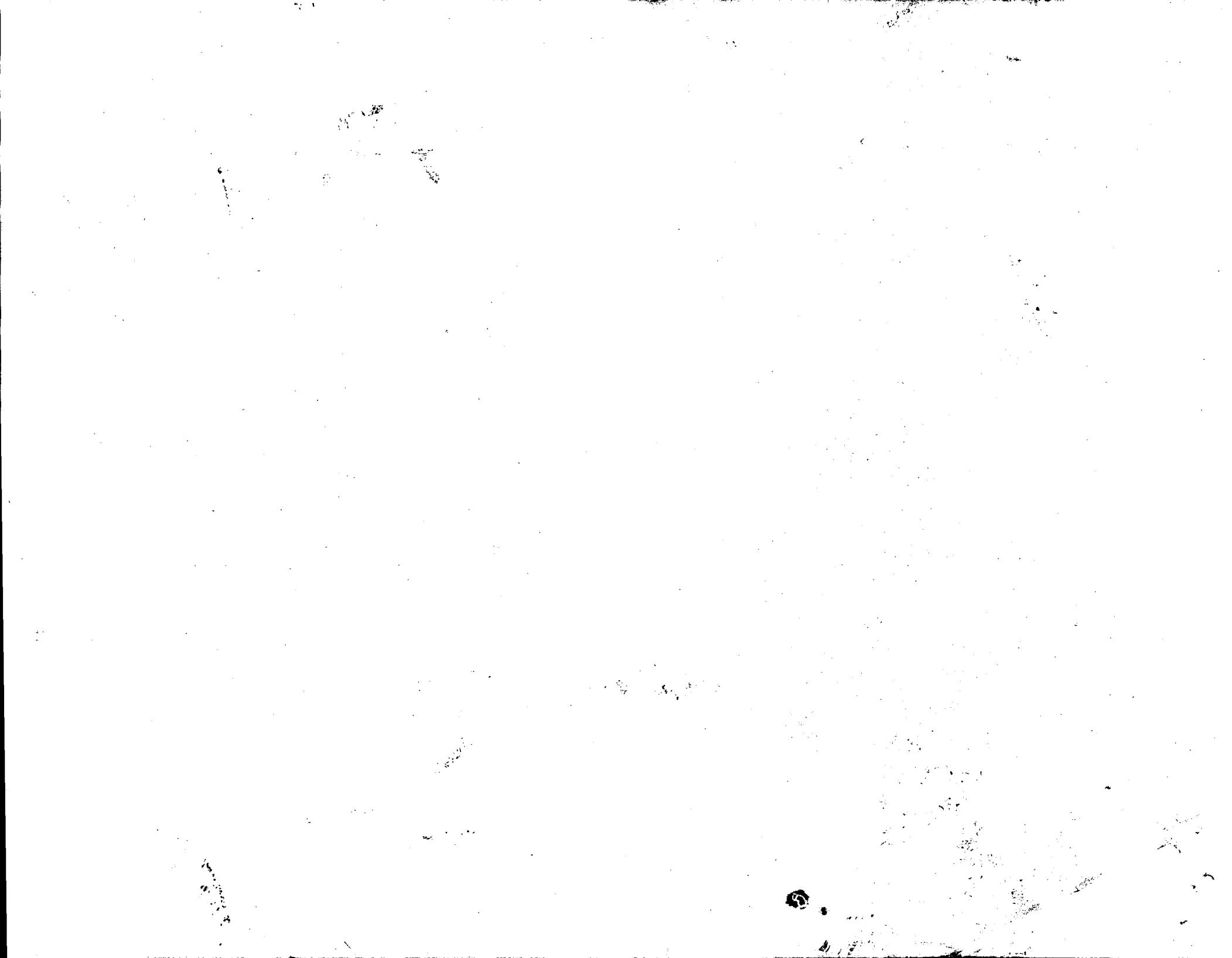
SWORN TO AND SUBSCRIBED BEFORE ME THIS

DAY OF 20

CERTIFIED
BY:

QUALITY ASSURANCE REPRESENTATIVE

NOTARY PUBLIC



DART AEROSPACE LTD

Work Order: 3402

Description: Ø2.250 Support

Part Number: D2891-1

Inspection Dwg: D2891 Rev. A1

Page 1 of 1

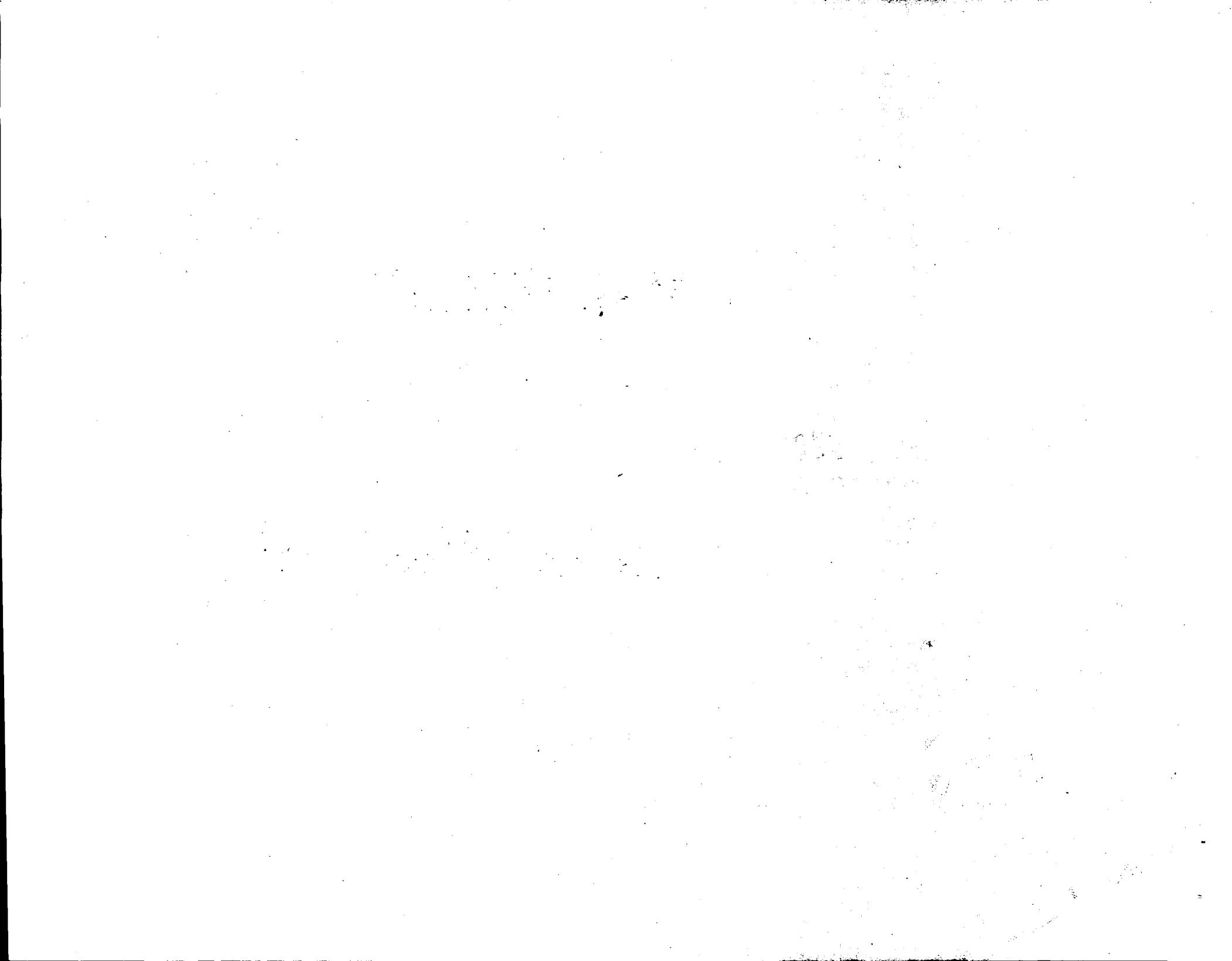
Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions						
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date	
Lathe Section										
A	2.274	2.279		2.278	2.277	2.279	2.277			
B	3.702	3.722		3.714	3.714	3.712	3.710			
C	2.564	2.584		2.571	2.573	2.574	2.573			
D	0.718	0.738		0.726	0.727	0.726	0.729			
E	0.090	0.110		0.100	0.100	0.100	0.097			
F	2.464	2.484		2.476	2.477	2.477	2.476			
G	2.029	2.049		2.035	2.023	2.033	2.033			
H	2.964	2.984		2.972	2.972	2.972	2.972			
I	0.913	0.933		0.930	0.930	0.925	0.927			
J	0.022	0.042		0.032	0.032	0.032	0.032			
K	0.090	0.110		0.100	0.098	0.099	0.099			
L										
HAAS Section										
AA	0.188	0.193		.188	.188	.188	.188			
AB	0.240	0.260		.244	.251	.252	.245			
AC	0.115	0.150		.128	.127	.128	.126			
AD	0.040	0.060		.051	.053	.055	.055			
AE	0.010	0.020		.015	.015	.015	.015			
AF	0.240	0.260		.250	.250	.250	.250			
AG	0.290	0.310		.293	.295	.295	.299			
AH	0.115	0.150		.140	.140	.140	.140			
AI	0.454	0.474		.464	.464	.463	.459			
AJ	2.779	2.789		2.793	2.781	2.780	2.782			
AK	0.240	0.260		.250	.250	.250	.250			
AL	1.002	1.042		1.040	1.041	1.037	1.034			
AM	0.053	0.073		.063	.063	.063	.063			
AN	0.257	0.262		.257	.257	.257	.257			
AO	1.663	1.683		1.683	1.683	1.683	1.678			
AP	0.053	0.073		.063	.063	.063	.063			
AQ	0.022	0.042		.032	.032	.032	.032			
AR										
AS										
Accept/Reject										

Measured by:	<i>Smf</i>	1	RF
Date:	07/11/01	07/11/18	

Audited by:	<i>JF</i>
Date:	07/11/22

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	



DART AEROSPACE LTD		Work Order:	34062
Description: Ø2.250 Support		Part Number:	D2891-1
Inspection Dwg: D2891 Rev. A1		Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	15	26	37	48	By	Date
Lathe Section									
A	2.274	2.279		2.277	2.278	2.279	2.278		
B	3.702	3.722		3.708	3.711	3.712	3.712		
C	2.564	2.584		2.572	2.573	2.574	2.574		
D	0.718	0.738		0.730	0.730	0.727	0.727		
E	0.090	0.110		0.097	0.097	0.100	0.100		
F	2.464	2.484		2.476	2.476	2.476	2.476		
G	2.029	2.049		2.034	2.032	2.033	2.032		
H	2.964	2.984		2.972	2.972	2.972	2.972		
I	0.913	0.933		0.930	0.928	0.928	0.927		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.090	0.110		0.099	0.099	0.097	0.099		
L									
HAAS Section									
AA	0.188	0.193		.188	.188	.188	.188		
AB	0.240	0.260		.250	.250	.251	.251		
AC	0.115	0.150		.128	.127	.128	.128		
AD	0.040	0.060		.055	.055	.050	.050		
AE	0.010	0.020		.015	.015	.015	.015		
AF	0.240	0.260		.250	.250	.250	.250		
AG	0.290	0.310		.300	.305	.300	.300		
AH	0.115	0.150		.140	.140	.140	.140		
AI	0.454	0.474		.464	.463	.464	.463		
AJ	2.779	2.789		2.790	2.780	2.781	2.780		
AK	0.240	0.260		.250	.250	.250	.250		
AL	1.002	1.042		1.037	1.033	1.035	1.039		
AM	0.053	0.073		.063	.063	.063	.063		
AN	0.257	0.262		.257	.257	.257	.257		
AO	1.663	1.683		1.683	1.680	1.683	1.680		
AP	0.053	0.073		.063	.063	.063	.063		
AQ	0.022	0.042		.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by:	ML / 8.5	Audited by:	J.F. 07/11/22
Date:	07/11/22 / 07/11/22	Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

DART AEROSPACE LTD

Work Order: 7/10/22

Description: Ø2.250 Support

Part Number: D2891-1

Inspection Dwg: D2891 Rev. A1

Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	19	210	311	412	By	Date
Lathe Section									
A	2.274	2.279		2.278	2.277	2.277	2.277		
B	3.702	3.722		3.712	3.712	3.713	3.712		
C	2.564	2.584		2.574	2.573	2.574	2.574		
D	0.718	0.738		0.727	0.727	0.727	0.726		
E	0.090	0.110		0.100	0.100	0.100	0.098		
F	2.464	2.484		2.476	2.476	2.477	2.476		
G	2.029	2.049		2.033	2.032	2.033	2.030		
H	2.964	2.984		2.972	2.972	2.972	2.972		
I	0.913	0.933		0.930	0.932	0.927	0.930		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.090	0.110		0.099	0.106	0.099	0.099		
L									
HAAS Section									
AA	0.188	0.193		.189	.189	.189	.189		
AB	0.240	0.260		.250	.251	.248	.250		
AC	0.115	0.150		.124	.124	.124	.124		
AD	0.040	0.060		.051	.053	.054	.056		
AE	0.010	0.020		.010	.010	.010	.010		
AF	0.240	0.260		.250	.250	.250	.250		
AG	0.290	0.310		.300	.300	.300	.300		
AH	0.115	0.150		.135	.135	.135	.136		
AI	0.454	0.474		.463	.460	.461	.459		
AJ	2.779	2.789		2.784	2.784	2.784	2.784		
AK	0.240	0.260		.250	.250	.250	.250		
AL	1.002	1.042		1.038	1.037	1.037	1.036		
AM	0.053	0.073		.063	.063	.063	.063		
AN	0.257	0.262		.258	.258	.258	.258		
AO	1.663	1.683		1.675	1.676	1.675	1.676		
AP	0.053	0.073		.063	.063	.063	.063		
AQ	0.022	0.042		.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by:	OML	/	J.L
Date:	07/11/01	/	07/11/21

Audited by:	J.F.		
Date:	07/11/22		

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

DART AEROSPACE LTD

Work Order:

34062

Description: Ø2.250 Support

Part Number:

D2891-1

Inspection Dwg: D2891 Rev. A1

Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	X13	X14	X15	X16	By	Date
Lathe Section									
A	2.274	2.279		2.271	2.279	2.278	2.276		
B	3.702	3.722		3.712	3.712	3.714	3.713		
C	2.564	2.584		2.573	2.574	2.573	2.573		
D	0.718	0.738		0.728	0.728	0.728	0.727		
E	0.090	0.110		0.099	0.100	0.100	0.100		
F	2.464	2.484		2.477	2.477	2.477	2.477		
G	2.029	2.049		2.033	2.033	2.033	2.032		
H	2.964	2.984		2.972	2.972	2.972	2.972		
I	0.913	0.933		0.930	0.925	0.927	0.930		
J	0.022	0.042		0.032	0.032	0.032	0.032		
K	0.090	0.110		0.099	0.099	0.099	0.099		
L									
HAAS Section									
AA	0.188	0.193		.189	.189	.189	.189		
AB	0.240	0.260		.250	.252	.250	.250		
AC	0.115	0.150		.125	.125	.125	.124		
AD	0.040	0.060		.054	.055	.054	.056		
AE	0.010	0.020		.010	.010	.010	.010		
AF	0.240	0.260		.250	.250	.250	.250		
AG	0.290	0.310		.300	.300	.300	.300		
AH	0.115	0.150		.136	.136	.136	.136		
AI	0.454	0.474		.461	.464	.464	.463		
AJ	2.779	2.789		2.784	2.784	2.784	2.784		
AK	0.240	0.260		.250	.250	.250	.250		
AL	1.002	1.042		1.036	1.036	1.037	1.036		
AM	0.053	0.073		.063	.063	.063	.063		
AN	0.257	0.262		.258	.258	.258	.258		
AO	1.663	1.683		1.675	1.675	1.675	1.676		
AP	0.053	0.073		.063	.063	.063	.063		
AQ	0.022	0.042		.032	.032	.032	.032		
AR									
AS									
Accept/Reject									

Measured by: Onl / J.L
 Date: 07/11/01 / 07/11/02

Audited by:
 Date: J.F. 07/11/02

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	

